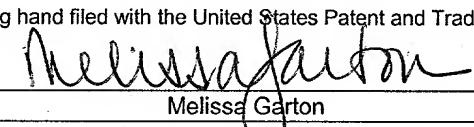
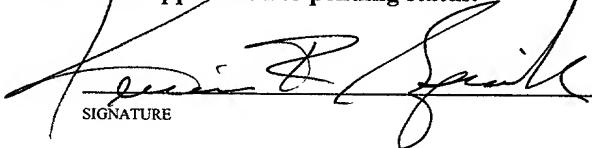


*FORM PTO-1390 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK (REV 11-2000)		ATTORNEY'S DOCKET NUMBER 449122013100
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. § 371		
INTERNATIONAL APPLICATION NO. PCT/DE00/01111	INTERNATIONAL FILING DATE April 11, 2000	PRIORITY DATE CLAIMED June 24, 1999
TITLE OF INVENTION COMMUNICATIONS METHOD AND COMMUNICATIONS SYSTEM		
APPLICANT(S) FOR DO/EO/US Oliver ZECHLIN		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
1.	<input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.	
2.	<input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371	
3.	<input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.	
4.	<input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).	
5.	<input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input checked="" type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).	
6.	<input checked="" type="checkbox"/> An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)). a. <input checked="" type="checkbox"/> is attached hereto. b. <input checked="" type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).	
7.	<input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)). a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made.	
8.	<input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).	
9.	<input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).	
10.	<input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).	
Items 11. to 16. below concern document(s) or information included:		
11.	<input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.	
12.	<input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.	
13.	<input type="checkbox"/> A FIRST preliminary amendment.	
14.	<input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.	
15.	<input type="checkbox"/> A substitute specification.	
16.	<input type="checkbox"/> A change of power of attorney and/or address letter.	
17.	<input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.	
18.	<input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).	
19.	<input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).	
20.	<input checked="" type="checkbox"/> Other items or information: 1) Application Data Sheet; 2) Int'l Search Report; 3) IPER; 4) Return receipt postcard.	
CERTIFICATE OF HAND DELIVERY		
I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on December 21, 2001.		
 Melissa Garton		

U.S. APPLICATION NO (if known, see 37 CFR 1.5) Not yet assigned	INTERNATIONAL APPLICATION NO. PCT/DE00/01111	ATTORNEY DOCKET NO 449122013100	
<p>21. <input checked="" type="checkbox"/> The following fees are submitted:</p> <p>BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):</p> <p>Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....\$1,000.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.....\$860.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$710.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4)\$690.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)\$100.00</p>		CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).		\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	- 20 =		x \$18.00 \$0
Independent claims	- 3 =		x \$80.00 \$0
MULTIPLE DEPENDENT CLAIM(S) (if applicable)		+ \$270.00 \$0	
TOTAL OF ABOVE CALCULATIONS =		\$860.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.		\$0	
		SUBTOTAL =	\$0
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).		+ \$0	
		TOTAL NATIONAL FEE =	\$0
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property		+ \$0	
		TOTAL FEES ENCLOSED =	\$860.00
		Amount to be refunded:	\$
		charged:	\$
a. <input checked="" type="checkbox"/>	Please charge my <u>Deposit Account No. 03-1952</u> (referencing Docket No. 44912-20131.00) in the amount of \$860.00 to cover the above fees. A duplicate copy of this sheet is enclosed.		
b. <input checked="" type="checkbox"/>	The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to <u>Deposit Account No. 03-1952</u> (referencing Docket No. 44912-20131.00).		
<p>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</p> <p>SEND ALL CORRESPONDENCE TO:</p> <p>Kevin R. Spivak Morrison & Foerster LLP 2000 Pennsylvania Avenue, N.W. Washington, D.C. 20006-1888</p> <p> SIGNATURE</p> <p>Kevin R. Spivak Registration No. 43,148</p> <p>December 21, 2001</p>			

Application Data Sheet**Inventor Information**

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Application Information

Title Line One: COMMUNICATIONS METHOD AND
Title Line Two: COMMUNICATIONS SYSTEM
Total Drawing Sheets: 2
Formal Drawings?: Yes
Application Type: National Phase
Docket Number: 449122019500

Representative Information

Representative Customer Number: 25227

Continuity Information

This application is a: 371 of
> Application One: PCT/DE00/01111
Filing Date: April 11, 2000

Prior Foreign Applications

Foreign Application One: 19929001.6
Filing Date: June 24, 1999
Country: Germany
Priority Claimed: yes

10/018844

CERTIFICATE OF HAND DELIVERY

Rec'd PCT/PTC 22 APR 2002

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on April 22, 2002.


Melissa Garton

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Oliver ZECHLIN

Serial No.: 10/018,844

Filing Date: December 21, 2001

For: COMMUNICATIONS METHOD
AND SYSTEM TO CONVERT
MESSAGES INTO TELEVISION
SIGNALS (AS AMENDED)

Examiner: Not yet assigned

Group Art Unit: Not yet assigned

PRELIMINARY AMENDMENT

BOX PCT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend this application as follows:

In the Specification:

Please replace the Title with the following rewritten Title:

COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES INTO
TELEVISION SIGNALS

In the Claims:

Please cancel claims 1-17.

Please add new claims 18-34 as follows:

18. (New) A communications method, comprising:
inputting short message information on a mobile terminal;

transmitting short message information from the mobile terminal via a mobile radiotelephone channel to a corresponding base station;

transmitting the short message information from the base station to a TV transmitter unit;

converting the short message information into corresponding TV transmission signals;

transmitting the TV transmission signals corresponding to the short message information to a TV set; and

presenting short message information on the TV set to visualize the TV transmission signals or transmitting to another mobile terminal for output.

19. (New) The communications method as claimed in claim 18, wherein during inputting, a telephone number is entered together with the short message information, and during the transmitting from the base station, the short message information is transmitted to the TV transmitter unit corresponding to the telephone number.
20. (New) The communications method as claimed in claim 18, wherein during transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.
21. (New) The communications method as claimed in claim 18, wherein the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.
22. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is presented in videotext of the corresponding TV program.
23. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is inserted into the TV program.
24. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a permanent local display.

25. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a scrolling display.
26. (New) The communications method as claimed in claim 18, wherein during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.
27. (New) The communications method as claimed in claim 18, wherein the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.
28. (New) The communications method as claimed in claim 18, wherein the short message information during inputting is entered via a keypad of the mobile terminal.
29. (New) A communications system comprising:
- a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information;
 - at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals;
 - a conversion unit to convert the received short message information into TV transmission signals; and
 - a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein
 - the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.
30. (New) The communications system as claimed in claim 29, wherein the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to

the short message information via the TV transmission channel reserved for the transmission of short message information.

31. (New) The communications system as claimed in claim 30, wherein the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

32. (New) The communications system as claimed in claim 31, wherein the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.

33. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

34. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

In the Abstract:

Please replace the Abstract with the substitute Abstract attached hereto.

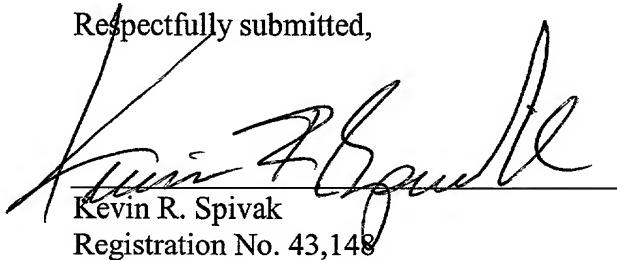
REMARKS

Amendments to the specification have been made and are submitted herewith in the attached Substitute Specification. A clean copy of the specification and a marked-up version showing the changes made are attached herewith. The claims and abstract have been amended in the attached Preliminary Amendment. All amendments have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. No new matter has been added.

Attached hereto is a marked-up version of the changes made to the claims and abstract by the current amendment. The attached page is captioned "Version with markings to show changes made".

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 449122013100. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,



Kevin R. Spivak
Registration No. 43,148

Dated: April 22, 2002

Morrison & Foerster LLP
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1888
Telephone: (202) 887-6924
Facsimile: (202) 263-8396

VERSION WITH MARKINGS TO SHOW CHANGES MADE

For the convenience of the Examiner, the changes made are shown below with deleted text in strikethrough and added text in underline.

In the Specification:

Please replace the Title with the following rewritten Title:

COMMUNICATIONS METHOD AND COMMUNICATIONS SYSTEM TO CONVERT
MESSAGES INTO TELEVISION SIGNALS

In the Claims:

Please cancel claims 1-17.

Please add new claims 18-34 as follows:

18. (New) A communications method, comprising:
inputting short message information on a mobile terminal;
transmitting short message information from the mobile terminal via a mobile radiotelephone channel to a corresponding base station;
transmitting the short message information from the base station to a TV transmitter unit;
converting the short message information into corresponding TV transmission signals;
transmitting the TV transmission signals corresponding to the short message information to a TV set; and
presenting short message information on the TV set to visualize the TV transmission signals or transmitting to another mobile terminal for output.

19. (New) The communications method as claimed in claim 18, wherein during inputting, a telephone number is entered together with the short message information, and during the transmitting from the base station, the short message information is transmitted to the TV transmitter unit corresponding to the telephone number.

20. (New) The communications method as claimed in claim 18, wherein during transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.
21. (New) The communications method as claimed in claim 18, wherein the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.
22. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is presented in videotext of the corresponding TV program.
23. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is inserted into the TV program.
24. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a permanent local display.
25. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a scrolling display.
26. (New) The communications method as claimed in claim 18, wherein during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.
27. (New) The communications method as claimed claim 18, wherein the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.
28. (New) The communications method as claimed in claim 18, wherein the short message information during inputting is entered via a keypad of the mobile terminal.

29. (New) A communications system comprising:
a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information;
at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals;
a conversion unit to convert the received short message information into TV transmission signals; and
a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein
the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.
30. (New) The communications system as claimed in claim 29, wherein the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.
31. (New) The communications system as claimed in claim 30, wherein the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.
32. (New) The communications system as claimed in claim 31, wherein the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.
33. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

34. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

In the Abstract:

Please replace the Abstract with the substitute Abstract attached hereto.

Claims

1. A communications method,

comprising the following steps:

a) Input of short message information on a mobile terminal (1a), and

b) Transmission of the short message information from the mobile terminal (1a) via a mobile radiotelephone channel (7) to a corresponding base station (2), characterized in that,

issuing from the base station (2), the short message information is optionally either further processed by the following steps:

c) Transmission of the short message information from the base station (2) to a TV transmitter unit (3),

d) Conversion of the short message information into corresponding TV transmission signals,

e) Transmission of the TV transmission signals corresponding to the short message information to a TV set (10), and

f) Visualization of the TV transmission signals to present the short message information on the TV set (10),

or is transmitted directly to a further mobile terminal (1b) for output.

2. The communications method as claimed in claim 1,

characterized in that,

in step a), a telephone number is entered together with the short message information, and

in step c), the short message information is transmitted to a TV transmitter unit (3) corresponding to the telephone number.

3. The communications method as claimed in claim 1 or 2,

characterized in that,

in step e), the TV transmission signals corresponding to the short message information are transmitted via a

transmission channel reserved for the transmission of short message information to the TV sets (10).

4. The communications method as claimed in claim 1 or 2,

characterized in that,

in step e), the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

5. The communications method as claimed in claim 4, characterized in that,

in step f), the short message information is presented in the videotext of the corresponding TV program.

6. The communications method as claimed in claim 4, characterized in that,

in step f), the short message information is inserted into the TV program.

7. The communications method as claimed in one of the preceding claims,

characterized in that,

in step f), the short message information is presented on the TV set (10) in the form of a permanent local display.

8. The communications method as claimed in one of claims 1-6,

characterized in that,

in step f), the short message information is presented on the TV set (10) in the form of a scrolling display.

9. The communications method as claimed in one of the preceding claims,

characterized in that,

in step f), short message information from different mobile terminals (1a, b) is presented simultaneously on the TV set.

10. The communications method as claimed in one of the preceding claims,

characterized in that

the short message information in step f) is presented on the TV set (10) together with a telephone number which is allocated to the mobile terminal (1a) which is used in steps a) and b) to enter and send the short message information.

11. The communications method as claimed in one of the preceding claims,

characterized in that

the short message information in step a) is entered via a keypad (12) of the mobile terminal (1a).

12. A communications system,

with a plurality of mobile terminals (1a, b) which communicate with one another via a mobile radiotelephone channel (7, 8), whereby the mobile terminals (1a, b) are designed to transmit short message information, whereby furthermore the communications system comprises at least one TV transmitter unit (3) which has reception means (4) to receive the short message information which has been transferred by one of the mobile terminals (1a), conversion means (5) to convert the received short message information into TV transmission signals, and transmission means (6) to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel (9), and whereby the mobile terminals (1a, b) communicate with one another via at least one base station (2),

characterized in that

the base station (2) is designed in such a way that it optionally either forwards short message information received from one of the mobile terminals (1a) to the TV transmitter unit (3) identified by a corresponding telephone number, or transmits it directly to a further mobile terminal (1b) for output.

13. The communications system as claimed in claim 12, characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for the transmission of short message information.

14. The communications system as claimed in claim 13, characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for a TV program.

15. The communications system as claimed in claim 14, characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the short message information via the TV transmission channel (9), embedded in the videotext information of the corresponding TV program.

16. The communications system as claimed in one of claims 12-15,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10),

whereby the TV sets (10) present the short message information in the form of a permanent local display.

17. The communications system as claimed in one of claims 12-15,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10), whereby the TV sets (10) present the short message information in the form of a scrolling display.

**COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES INTO
TELEVISION SIGNALS**

ABSTRACT

Short messages are sent by mobile terminals of a mobile radiotelephone system to a TV transmitter unit identified by a corresponding telephone number. The short messages are converted into TV transmission signals in said unit and fed to the television network so that the short messages can be shown on TV sets connected to the television network.

**Substitute Specification
(Clean Copy)**

**COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES
INTO TELEVISION SIGNALS**

CLAIM FOR PRIORITY

This application claims priority to International
5 Application No. PCT/DE00/01111 which was published in
the German language on January 4, 2001.

TECHNICAL FIELD OF THE INVENTION

A system and method of communication, and in
10 particular, for communicating short messages into
television signals.

BACKGROUND OF THE INVENTION

In conventional mobile radiotelephone systems,
15 communications information, in particular voice
information, is transmitted between mobile terminals or
mobile telephones. To transmit the information, base
stations are provided which forward the information
arriving from a mobile telephone to the required
20 destination terminal. The base stations also serve as
an interface with the fixed telephone network to which
line-connected subscriber terminals are connected, and
with which communication with the mobile telephones is
similarly possible.

25

In modern mobile radiotelephone systems, e.g. GSM
mobile radiotelephone systems (Global System For Mobile
Communications), "Teleservices" are additionally
offered. A teleservice for example in GSM mobile
30 radiotelephone systems, is the "Short Message Services"
(SMS), which supports the transmission of short
messages comprising up to 160 (7-bit ASCII)
alphanumeric characters, between the mobile telephones
of the mobile radiotelephone system. Each short message
35 is transmitted in the form of a data packet. A short

message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile radiotelephone subscriber.

5

However, in these short message services which are offered in conventional mobile radiotelephone systems, short messages can normally be sent to one destination subscriber only. If a user wants to address a plurality 10 of destination subscribers, the short message transmission must be repeated for telephone numbers allocated to the destination being addressed. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other 15 mobile terminal which is capable of receiving short information of this type.

SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a 20 communications method. The method includes, for example, inputting short message information on a mobile terminal, transmitting short message information from the mobile terminal via a mobile radiotelephone channel to a corresponding base station, transmitting 25 the short message information from the base station to a TV transmitter unit, converting the short message information into corresponding TV transmission signals, transmitting the TV transmission signals corresponding to the short message information to a TV set, and 30 presenting short message information on the TV set to visualize the TV transmission signals or transmitting to another mobile terminal for output.

In another aspect of the invention, during 35 inputting, a telephone number is entered together with the short message information, and during the

transmitting from the base station, the short message information is transmitted to the TV transmitter unit corresponding to the telephone number.

In another aspect of the invention, during
5 transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.

10 In yet another aspect of the invention, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

15 In another aspect of the invention, during presenting, the short message information is presented in videotext of the corresponding TV program.

In another aspect of the invention, during presenting, the short message information is inserted into the TV program.

20 In still another aspect of the invention, during presenting, the short message information is presented on the TV set in the form of a permanent local display.

25 In another aspect of the invention, during presenting, the short message information is presented on the TV set in the form of a scrolling display.

In another aspect of the invention, during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.

30 In yet another aspect of the invention, the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to
35 enter and send the short message information.

In another aspect of the invention, the short message information during inputting is entered via a keypad of the mobile terminal.

In another embodiment of the invention, there is a
5 communications system. The system includes, for example, a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information, at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals, a conversion unit to convert the received short message information into TV transmission signals, and a transmission unit to transmit the TV
10 transmission signals corresponding to the received short message information via a TV transmission channel, wherein the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message
15 information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.
20

25 In another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission
30 of short message information.

In another aspect of the invention, the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the
35 TV transmission channel reserved for the transmission

of short message information.

In still another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the short message information

- 5 via a TV transmission channel embedded in videotext information of the corresponding TV program.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV

- 10 sets presenting the short message information in the form of a permanent local display.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV

- 15 sets presenting the short message information in the form of a scrolling display.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in detail below with
20 reference to the attached drawing.

Fig. 1 shows a simplified structure of a communications system according to an embodiment of the present invention.

Figs. 2A and 2B show an exemplary input and
25 transmission of short messages in the communications system shown in Fig. 1

Fig. 3 shows a visualization of short messages transmitted via the communications system shown in Fig. 1 on the screen of a TV set.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention discloses a communications method and system which enables the transmission of short messages to an unlimited group of persons.

According to the invention, packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), are transmitted from mobile terminals, e.g. mobile
5 telephones, of a mobile radiotelephone system to a TV transmitter unit. These messages are converted into TV transmission signals and fed into the TV network, so that the messages can be visualized and presented on the screens of TV sets connected to the TV network.

10

The short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

15

In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has only been known to interact with the television program via a
20 telephone voice link, via DTMF-enabled telephones (Dual Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the appropriate hardware and is often expensive.

25

The present invention also provides the ability to create virtual TV chatrooms for discussion between multiple subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

30

With the present invention, mobile radio subscribers can address an unlimited group of persons, since the TV transmitter unit selected by the subscriber forwards the relevant short messages to all TV sets connected to
35 the television network. In particular, subscribers who

possess no mobile terminal can also be addressed. The subscriber need only possess a TV set and a mobile telephone in order to participate actively in the communication.

5

The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, including two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a, 1b transmit communications information via an uplink 7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface between mobile telephones of the corresponding mobile radiotelephone system, and between the mobile radiotelephone system and a fixed telephone network (not shown). This makes it possible to telephone or communicate via the mobile telephones 1a, 1b with fixed-network subscribers. The mobile radiotelephone network typically has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages may be entered via the keypad 12a, 12b of the mobile telephone or by means of voice input (through voice recognition on the mobile telephone

itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a
5 corresponding telephone number, to be presented there on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a
10 terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages,
15 not only to one other mobile radiotelephone subscriber, but also to TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

20 The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short
25 messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in
30 a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the
35 function of the TV transmitter unit 3 can also be

implemented merely by means of a correspondingly designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received
5 short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the corresponding screens. Thus, for example, it is
10 possible for the short information to be transmitted by the TV transmitter unit 2 via a TV transmission channel to the TV sets 10a, 10b, whereby a dedicated channel space is provided to display the currently available short information. The short information can also be
15 incorporated in the TV sets 10a, 10b into the videotext service offered by the various TV programs or TV transmitters. It is also possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to
20 a specific TV program or TV transmitter and for the short information then to be inserted into the normal TV program. The short messages can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form
25 of a permanent local display on the corresponding screen.

Additional information, such as the name and/or telephone number of the mobile radiotelephone
30 subscriber sending the short messages, can also be added by the TV transmission station 2 to the short messages.

With the aid of the communications system according to
35 the invention shown in Fig. 1, it is, for example,

possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current television program and send messages to the television audience.

5

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can
10 also be created, which will be explained in detail
below with reference to the illustrations shown in
Figs. 2A, 2B and 3.

As shown in Fig. 2A, with reference to the content of
15 the display 11 of a mobile telephone, a mobile
radiotelephone subscriber initially enters the short
message "Anyone going to the R.E.M. concert next week?"
via the keypad of his mobile telephone and transmits
this by entering the telephone number "0179 700 800 9",
20 which is allocated to the "MSNBC-Chat TV" application,
via the mobile radiotelephone network to a base station
2 (cf. the illustration shown in Fig. 2B). The base
station 2 then forwards the short message to a TV
transmitter unit 3 corresponding to the dial-up
25 application.

In the TV transmitter unit 3, the short message is
converted into a TV transmission signal, is fed into
the corresponding television network and transmitted to
30 the TV sets connected thereto. As shown in Fig. 3, with
reference to the screen content of a corresponding TV
set 10, short messages transmitted to the TV set 10 of
mobile radiotelephone subscribers are presented in the
form of a display scrolling from top to bottom, for
35 example in a free channel space, thereby producing a

presentation of messages similar to an Internet chat.

In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each
5 case sending the short messages are presented along with the actual short messages.

**Substitute Specification
(Marked-up Version)**

Description

COMMUNICATIONS METHOD AND COMMUNICATIONS SYSTEM TO
CONVERT MESSAGES INTO TELEVISION SIGNALS

CLAIM FOR PRIORITY

5 This application claims priority to International Application No. PCT/DE00/01111 which was published in the German language on January 4, 2001.

TECHNICAL FIELD OF THE INVENTION

10 A system and method of communication, and in particular, for communicating short messages into television signals.

15 ~~The present invention relates to a communications method according to the preamble to claim 1 and a communications system according to the preamble to claim 12.~~

BACKGROUND OF THE INVENTION

20 In conventional mobile radiotelephone systems, communications information, in particular voice information, is transmitted between mobile terminals or mobile telephones, ~~whereby, to.~~ To transmit the information, base stations are provided which forward the information arriving from a mobile telephone to the required destination terminal. The base stations also serve as an interface with the fixed telephone network to which line-connected subscriber terminals are connected, and with which communication with the mobile telephones is similarly possible.

30 In modern mobile radiotelephone systems, e.g. GSM mobile radiotelephone systems (Global System For Mobile Communications), "Teleservices" are additionally offered. A teleservice ~~of this type is,~~ for example, in 35 GSM mobile radiotelephone systems, is the "Short

Message Services" (SMS), which supports the transmission of short messages comprising up to 160 (7-bit ASCII) alphanumeric characters, between the mobile telephones of the mobile radiotelephone system. Each 5 short message is transmitted in the form of a data packet. A short message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile radiotelephone subscriber.

10

However, in these known short message services which are offered in conventional mobile radiotelephone systems, a short message messages can normally be sent to one destination subscriber only. If a user wants to 15 address a plurality of destination subscribers are intended to be addressed, the short message transmission must be repeated several times with different for telephone numbers which are allocated to the individual required destination subscribers being 20 addressed. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

25 The object of the present invention is therefore to propose a communications method and a corresponding communications system which, with simple means, enables the transmission of short messages to a virtually unlimited group of persons.

30

SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a 35 communications method. The method includes, for example, inputting short message information on a mobile terminal, transmitting short message information from the mobile terminal via a mobile radiotelephone

channel to a corresponding base station, transmitting
the short message information from the base station to
a TV transmitter unit, converting the short message
information into corresponding TV transmission signals,
5 transmitting the TV transmission signals corresponding
to the short message information to a TV set, and
presenting short message information on the TV set to
visualize the TV transmission signals or transmitting
to another mobile terminal for output.

10 In another aspect of the invention, during
inputting, a telephone number is entered together with
the short message information, and during the
transmitting from the base station, the short message
information is transmitted to the TV transmitter unit
15 corresponding to the telephone number.

In another aspect of the invention, during
transmitting the TV transmission signals, the TV
transmission signals corresponding to the short message
information are transmitted via a transmission channel
20 reserved for the transmission of short message
information to the TV set.

In yet another aspect of the invention, the TV
transmission signals corresponding to the short message
information are transmitted via a transmission channel
25 reserved for a TV program to the TV set.

In another aspect of the invention, during
presenting, the short message information is presented
in videotext of the corresponding TV program.

30 In another aspect of the invention, during
presenting, the short message information is inserted
into the TV program.

In still another aspect of the invention, during
presenting, the short message information is presented
on the TV set in the form of a permanent local display.

35 In another aspect of the invention, during

presenting, the short message information is presented on the TV set in the form of a scrolling display.

In another aspect of the invention, during presenting, short message information from different
5 mobile terminals is presented simultaneously on the TV set.

In yet another aspect of the invention, the short message information during presenting is presented on the TV set together with a telephone number which is
10 allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.

In another aspect of the invention, the short message information during inputting is entered via a
15 keypad of the mobile terminal.

In another embodiment of the invention, there is a communications system. The system includes, for example, a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information, at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals, a conversion unit to convert the received short message information into TV transmission signals, and a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for
20
25
30
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output.

In another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

In another aspect of the invention, the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

In still another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

This object is achieved according to the present invention by a communications method with the features of claim 1 and a communications system with the features of claim 12. The subclaims in each case define preferred and advantageous embodiments of the present invention.

According to the invention, it is proposed to transmit packet oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), from mobile terminals, e.g. mobile telephones, of a mobile radiotelephone system to a TV transmitter unit which converts these messages into TV transmission signals and feeds them into the TV network, so that the messages can be visualized and presented on the screens of all TV sets connected to the TV network.

These short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has hitherto only been known to participate in the respective television program via a telephone voice link, via DTMF enabled telephones (Dual Tone Multi Frequency) or via cable connected data transmission (in particular via the Internet), which requires the corresponding hardware and is consequently expensive.

Furthermore, on the basis of the present invention, it is also possible to create virtual TV chatrooms for chat between a multiplicity of subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

With the aid of the present invention, any mobile radio subscriber can address a virtually unlimited group of persons, since the TV transmitter unit selected by him forwards the relevant short messages to all TV sets

connected to the television network. In particular, subscribers who possess no mobile terminal can also be addressed. The corresponding subscriber has only to possess a TV set and a mobile telephone in order to 5 participate actively in the communication.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in detail below with reference to the attached drawing.

10 Fig. 1 shows the a simplified structure of a communications system according to an embodiment of the present invention.

Figs. 2A and 2B show representations to explain the an exemplary input and transmission of short messages in 15 the communications system shown in Fig. 1

Fig. 3 shows a representation to explain the visualization of short messages transmitted via the communications system shown in Fig. 1 on the screen of a TV set.

20

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention discloses a communications method and system which enables the transmission of short messages to an unlimited group of persons.

25

According to the invention, packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), are transmitted from mobile terminals, e.g. mobile 30 telephones, of a mobile radiotelephone system to a TV transmitter unit. These messages are converted into TV transmission signals and fed into the TV network, so that the messages can be visualized and presented on the screens of TV sets connected to the TV network.

35

The short messages can be presented, for example,

continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

- 5 In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has only been known to interact with the television program via a telephone voice link, via DTMF-enabled telephones (Dual
- 10 Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the appropriate hardware and is often expensive.
- 15 The present invention also provides the ability to create virtual TV chatrooms for discussion between multiple subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.
- 20 With the present invention, mobile radio subscribers can address an unlimited group of persons, since the TV transmitter unit selected by the subscriber forwards the relevant short messages to all TV sets connected to the television network. In particular, subscribers who
- 25 possess no mobile terminal can also be addressed. The subscriber need only possess a TV set and a mobile telephone in order to participate actively in the communication.
- 30 The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, ~~which is represented by~~ including two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a, 1b transmit communications information via an uplink
- 35

7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface, ~~on the one hand~~ between all mobile
5 telephones of the corresponding mobile radiotelephone system and, ~~on the other hand,~~, and between the mobile radiotelephone system and a fixed telephone network (not shown), ~~so that.~~ This makes it is also possible to telephone or communicate via the mobile telephones
10 1a, 1b with fixed-network subscribers. The mobile radiotelephone network ~~normally~~ typically has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding
15 radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented
20 messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages are may be entered via the keypad 12a, 12b of the mobile telephone or by means of voice input
25 (through voice recognition on the mobile telephone itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a
30 corresponding telephone number, to be presented there on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a
35 terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the

corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages, not only to one other mobile radiotelephone subscriber, but also to all TV sets 10a, 10b connected to the 5 television network of the dialed-up TV transmitter unit 3.

The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received 10 from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short messages into a television-compatible format is connected to the radio-frequency interface 4. The 15 information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

20 The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the function of the TV transmitter unit 3 can also be implemented merely by means of a correspondingly 25 designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received short messages into the television network.

30 The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the corresponding screens. Thus, for example, it is conceivable possible for the short information always to be transmitted by the TV transmitter unit 2 via a TV 35 transmission channel ~~specifically reserved for this purpose~~ to the TV sets 10a, 10b, whereby a dedicated channel space is provided there to display the

currently available short information. The short information can also be incorporated in the TV sets 10a, 10b into the videotext service offered by the various TV programs or TV transmitters. It is also 5 possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to a specific TV program or TV transmitter and for the short information then to be inserted into the normal TV program. The short messages 10 can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form of a permanent local display on the corresponding screen.

15 Additional information, such as the name and/or telephone number of the mobile radiotelephone subscriber sending the short messages, can also be added by the TV transmission station 2 to the short messages.

20 With the aid of the communications system according to the invention shown in Fig. 1, it is, for example, possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current 25 television program and send messages to the television audience.

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can 30 submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can also be created, which will be explained in detail below with reference to the illustrations shown in Figs. 2A, 2B and 3.

35 As shown in Fig. 2A, with reference to the content of the display 11 of a mobile telephone, a mobile

radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits this by entering the telephone number "0179 700 800 9",
5 which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV transmitter unit 3 corresponding to the dial-up
10 application.

In the TV transmitter unit 3, ~~this~~ the short message is converted into a TV transmission signal, is fed into the corresponding television network and transmitted to
15 the TV sets connected thereto. As shown in Fig. 3, with reference to the screen content of a corresponding TV set 10, ~~all~~ short messages transmitted to the TV set 10 of ~~all~~ mobile radiotelephone subscribers are presented in the form of a display scrolling from top to bottom,
20 for example in a free channel space, thereby producing a presentation of messages similar to an Internet chat.

In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each
25 case sending the short messages are presented along with the actual short messages.

Abstract

Communications method and communications system

Short messages are sent by mobile terminals (1) of a mobile radiotelephone system to a TV transmitter unit (3) identified by a corresponding telephone number. The short messages are converted into TV transmission signals in said unit and fed to the television network so that the short messages can be shown on TV sets (10) connected to the television network.

(Fig. 1)

Rec'd PCT/PTC 22 APR 2002

Description

Communications method and communications system

- 5 The present invention relates to a communications method according to the preamble to claim 1 and a communications system according to the preamble to claim 12.
- 10 In conventional mobile radiotelephone systems, communications information, in particular voice information, is transmitted between mobile terminals or mobile telephones, whereby, to transmit the information, base stations are provided which forward 15 the information arriving from a mobile telephone to the required destination terminal. The base stations also serve as an interface with the fixed telephone network to which line-connected subscriber terminals are connected, and with which communication with the mobile 20 telephones is similarly possible.

In modern mobile radiotelephone systems, e.g. GSM mobile radiotelephone systems (Global System For Mobile Communications), "Teleservices" are additionally offered. A teleservice of this type is, for example, in 25 GSM mobile radiotelephone systems, the "Short Message Services" (SMS), which supports the transmission of short messages comprising up to 160 (7-bit ASCII) alphanumeric characters, between the mobile telephones 30 of the mobile radiotelephone system. Each short message is transmitted in the form of a data packet. A short message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile 35 radiotelephone subscriber.

However, in these known short message services which are offered in conventional mobile radiotelephone systems, a short message can normally be sent to one

destination subscriber only. If a plurality of destination subscribers are intended to be addressed, the short message transmission must be repeated several times with different telephone numbers which are 5 allocated to the individual required destination subscribers. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

10

The object of the present invention is therefore to propose a communications method and a corresponding communications system which, with simple means, enables the transmission of short messages to a virtually 15 unlimited group of persons.

This object is achieved according to the present invention by a communications method with the features of claim 1 and a communications system with the 20 features of claim 12. The subclaims in each case define preferred and advantageous embodiments of the present invention.

According to the invention, it is proposed to transmit 25 packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), from mobile terminals, e.g. mobile telephones, of a mobile radiotelephone system to a TV transmitter unit which converts these messages into TV 30 transmission signals and feeds them into the TV network, so that the messages can be visualized and presented on the screens of all TV sets connected to the TV network.

35 These short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

In this way, subscribers can participate spontaneously

and interactively in television productions or television programs. In this respect, it has hitherto only been known to participate in the respective television program via a telephone voice link, via 5 DTMF-enabled telephones (Dual Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the corresponding hardware and is consequently expensive.

10 Furthermore, on the basis of the present invention, it is also possible to create virtual TV chatrooms for chat between a multiplicity of subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

15 With the aid of the present invention, any mobile radio subscriber can address a virtually unlimited group of persons, since the TV transmitter unit selected by him forwards the relevant short messages to all TV sets 20 connected to the television network. In particular, subscribers who possess no mobile terminal can also be addressed. The corresponding subscriber has only to possess a TV set and a mobile telephone in order to participate actively in the communication.

25 The invention is explained in detail below with reference to the attached drawing.

Fig. 1 shows the simplified structure of a 30 communications system according to an embodiment of the present invention.

Figs 2A and 2B show representations to explain the input and transmission of short messages in the 35 communications system shown in Fig. 1

Fig. 3 shows a representation to explain the visualization of short messages transmitted via the

communications system shown in Fig. 1 on the screen of a TV set.

The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, which is represented by two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a, 1b transmit communications information via an uplink 7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface, on the one hand between all mobile telephones of the corresponding mobile radiotelephone system and, on the other hand, between the mobile radiotelephone system and a fixed telephone network (not shown), so that it is also possible to telephone or communicate via the mobile telephones 1a, 1b with fixed-network subscribers. The mobile radiotelephone network normally has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages are entered via the keypad 12a, 12b of the mobile telephone or by means of voice input (through voice recognition on the mobile telephone itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a corresponding telephone number, to be presented there

on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a
5 terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages,
10 not only to one other mobile radiotelephone subscriber, but also to all TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

15 The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short
20 messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in
25 a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the
30 function of the TV transmitter unit 3 can also be implemented merely by means of a correspondingly designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received
35 short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the

corresponding screens. Thus, for example, it is conceivable for the short information always to be transmitted by the TV transmitter unit 2 via a TV transmission channel specifically reserved for this
5 purpose to the TV sets 10a, 10b, whereby a dedicated channel space is provided there to display the currently available short information. The short information can also be incorporated in the TV sets 10a, 10b into the videotext service offered by the
10 various TV programs or TV transmitters. It is also possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to a specific TV program or TV transmitter and for the short information then to be
15 inserted into the normal TV program. The short messages can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form of a permanent local display on the corresponding screen.

20 Additional information, such as the name and/or telephone number of the mobile radiotelephone subscriber sending the short messages, can also be added by the TV transmission station 2 to the short
25 messages.

With the aid of the communications system according to the invention shown in Fig. 1, it is, for example, possible for any mobile radiotelephone subscriber to
30 intervene interactively and spontaneously in a current television program and send messages to the television audience.

It is thus also possible to create virtual TV market
35 places, where mobile radiotelephone subscribers can submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can

also be created, which will be explained in detail below with reference to the illustrations shown in Figs 2A, 2B and 3.

- 5 As shown in Fig. 2A with reference to the content of the display 11 of a mobile telephone, a mobile radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits
10 this by entering the telephone number "0179 700 800 9", which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV
15 transmitter unit 3 corresponding to the dial-up application.

In the TV transmitter unit 3, this short message is converted into a TV transmission signal, is fed into
20 the corresponding television network and transmitted to the TV sets connected thereto. As shown in Fig. 3 with reference to the screen content of a corresponding TV set 10, all short messages transmitted to the TV set 10 of all mobile radiotelephone subscribers are presented
25 in the form of a display scrolling from top to bottom, for example in a free channel space, thereby producing a presentation of messages similar to an Internet chat. In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each
30 case sending the short messages are presented along with the actual short messages.

Claims

1. A communications method,
comprising the following steps:

- a) Input of short message information on a mobile terminal (1), and
- b) Transmission of the short message information from the mobile terminal (1) via a mobile radiotelephone channel (7) to a corresponding base station (2), characterized by
the following steps:
 - c) Transmission of the short message information from the base station (2) to a TV transmitter unit (3),
 - d) Conversion of the short message information into corresponding TV transmission signals,
 - e) Transmission of the TV transmission signals corresponding to the short message information to a TV set (10), and
 - f) Visualization of the TV transmission signals to present the short message information on the TV set (10).

2. The communications method as claimed in claim 1,
characterized in that,
in step a), a telephone number is entered together with
the short message information, and
in step c), the short message information is transmitted to a TV transmitter unit (3) corresponding to the telephone number.

3. The communications method as claimed in claim 1 or
2,
characterized in that,
in step e), the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set (10).
4. The communications method as claimed in claim 1 or 2,

characterized in that,
in step e), the TV transmission signals corresponding
to the short message information are transmitted via a
transmission channel reserved for a TV program to the
TV set.

5. The communications method as claimed in claim 4,
characterized in that,
in step f), the short message information is presented
in the videotext of the corresponding TV program.

6. The communications method as claimed in claim 4,
characterized in that,
in step f), the short message information is inserted
into the TV program.

7. The communications method as claimed in one of the
preceding claims,
characterized in that,
in step f), the short message information is presented
on the TV set (10) in the form of a permanent local
display.

8. The communications method as claimed in one of
claims 1-6,
characterized in that,
in step f), the short message information is presented
on the TV set (10) in the form of a scrolling display.

9. The communications method as claimed in one of the
preceding claims,
characterized in that,
in step f), short message information from different
mobile terminals (1) is presented simultaneously on the
TV set.

10. The communications method as claimed in one of the
preceding claims,

characterized in that

the short message information in step f) is presented on the TV set (10) together with a telephone number which is allocated to the mobile terminal (1) which is used in steps a) and b) to enter and send the short message information.

11. The communications method as claimed in one of the preceding claims,

characterized in that

the short message information in step a) is entered via a keypad (12) of the mobile terminal (1).

12. A communications system,

with a plurality of mobile terminals (1) which communicate with one another via a mobile radiotelephone channel (7, 8), whereby the mobile terminals (1) are designed to transmit short message information,

characterized in that

the communications system comprises at least one TV transmitter unit (3) which has reception means (4) to receive the short message information which has been transferred by one of the mobile terminals (1), conversion means (5) to convert the received short message information into TV transmission signals, and transmission means (6) to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel (9).

13. The communications system as claimed in claim 12,

characterized in that

the mobile terminals (1) communicate with one another via at least one base station (2), and the base station (2) is designed in such a way that it forwards short message information received from one of the mobile terminals (1) to the TV transmitter unit (3) identified by a corresponding telephone number.

14. The communications system as claimed in claim 12 or 13,

characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for the transmission of short message information.

15. The communications system as claimed in claim 13 or 14,

characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for a TV program.

16. The communications system as claimed in claim 15,
characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the short message information via the TV transmission channel (9), embedded in the videotext information of the corresponding TV program.

17. The communications system as claimed in one of claims 12-16,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10), whereby the TV sets (10) present the short message information in the form of a permanent local display.

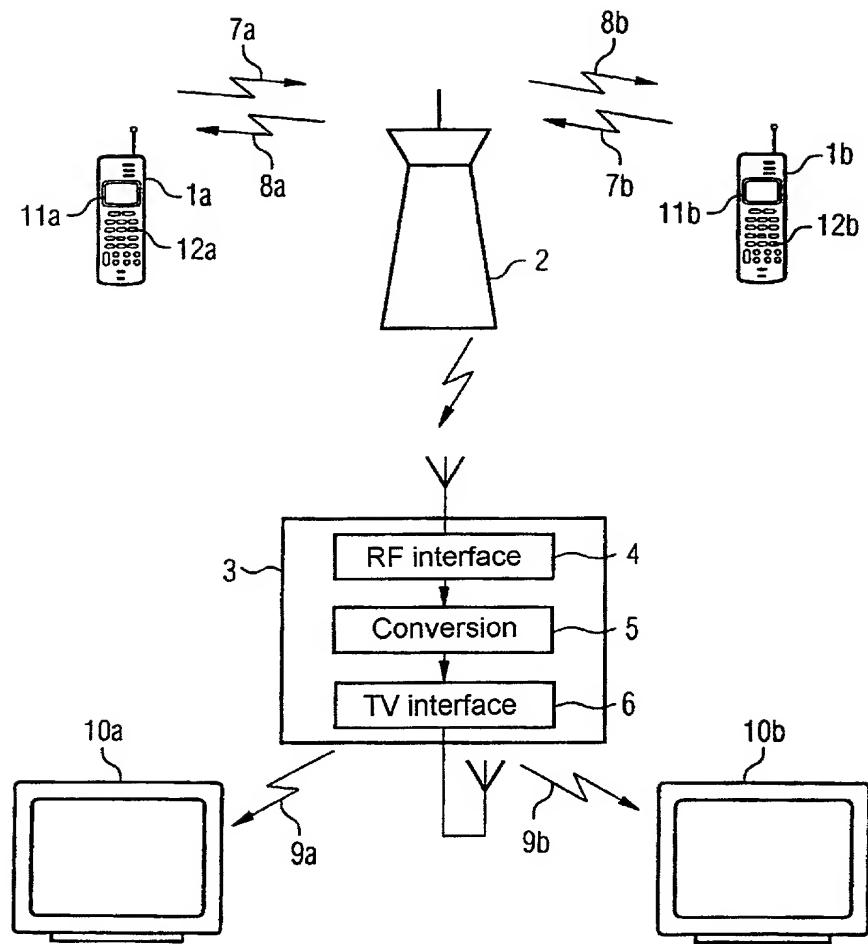
18. The communications system as claimed in one of claims 12-16,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10), whereby the TV sets (10) present the short message information in the form of a scrolling display.

1/2

FIG 1



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FIG 2A

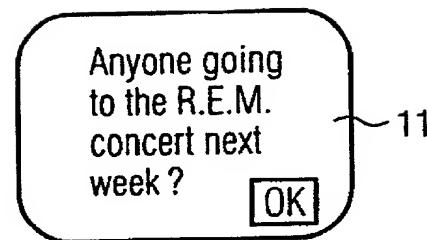
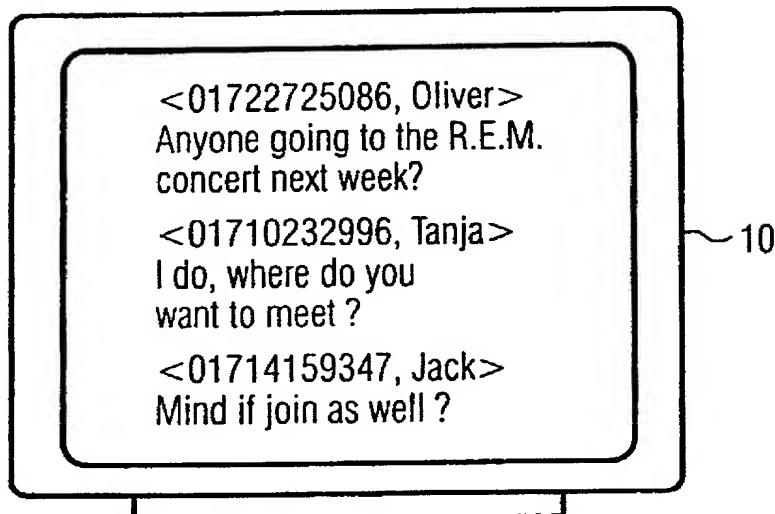


FIG 2B



FIG 3



Declaration and Power of Attorney For Patent Application**Erklärung Für Patentanmeldungen Mit Vollmacht****German Language Declaration**

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Kommunikationsverfahren und Kommunikationssystem zur Darstellung von Kurznachrichten an TV-Geräten

deren Beschreibung

(zutreffendes ankreuzen)

hier beigefügt ist.

am 11.04.2000 als

PCT internationale Anmeldung

PCT Anmeldungsnummer PCT/DE00/01111

eingereicht wurde und am _____

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschließlich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Abschnitt 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmelde-datum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Communication method and system for showing short messages on TV sets

the specification of which

(check one)

is attached hereto.

was filed on 11.04.2000 as

PCT international application

PCT Application No. PCT/DE00/01111

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign applications
Priorität beansprucht

Priority Claimed

<u>19929001.6</u> (Number) (Nummer)	<u>DE</u> (Country) (Land)	<u>24.06.1999</u> (Day Month Year Filed) (Tag Monat Jahr eingereicht)	<input checked="" type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein
<u> </u> (Number) (Nummer)	<u> </u> (Country) (Land)	<u> </u> (Day Month Year Filed) (Tag Monat Jahr eingereicht)	<input type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein
<u> </u> (Number) (Nummer)	<u> </u> (Country) (Land)	<u> </u> (Day Month Year Filed) (Tag Monat Jahr eingereicht)	<input type="checkbox"/> Yes Ja	<input type="checkbox"/> No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE00/01111
(Application Serial No.)
(Anmeldeseriennummer)

11.04.2000
(Filing Date D, M, Y)
(Anmeldedatum T, M, J)

anhängig
(Status)
(patentiert, anhangig,
aufgegeben)

pending
(Status)
(patented, pending,
abandoned)

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(Anmeldeseriennummer)

(Filing Date D,M,Y)
(Anmeldedatum T, M; J)

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abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgabe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

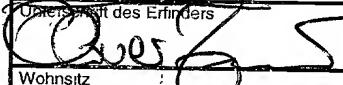
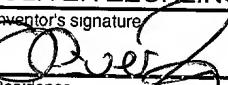
Customer No. 25227

And I hereby appoint

Telefongespräche bitte richten an: (Name und Telefonnummer)	Direct Telephone Calls to: (name and telephone number)
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Ext. _____

Postanschrift:	Send Correspondence to:
Morrison and Foerster LLP 2000 Pennsylvania Ave., NW 20006-1888 Washington, DC Telephone: (001) 202 887 1500 and Facsimile (001) 202 887 0763 or Customer No. 25227	

Voller Name des einzigen oder ursprünglichen Erfinders: OLIVER ZECHLIN	Full name of sole or first inventor: OLIVER ZECHLIN
Unterschrift des Erfinders 	Datum 3-30-2002
Wohnsitz STEIN, DEUTSCHLAND	Inventor's signature  Residence STEIN, GERMANY
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90547 STEIN	90547 STEIN
Voller Name des zweiten Miterfinders (falls zutreffend):	Full name of second joint inventor, if any:
Unterschrift des Erfinders	Datum
Wohnsitz	Residence
Staatsangehörigkeit	Citizenship
Postanschrift	Post Office Address

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).